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ABSTRACT

Information on the values of woodworking for young children and ways to introduce and manage a carpentry center for them are provided in this guide. The following topics are included: (1) the values of woodworking on child development; (2) how the teacher can use the center to provide for the integration, discovery, and development of woodworking skills and concepts at seven developmental levels; (3) guidelines for designing and setting up a carpentry center; (4) a checklist of the needed tools, materials, and accessories for the center; (5) the supervision, safety, and security of the center; and (6) how to plan activities to accommodate the seven different levels of growth in the children. A 12-item bibliography, one reference source, and two diagrams showing a workbench and tool storage area are also included. (JW)

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MANUSCRIPT: CHILDREN'S WORKSHOPS: IDEAS FOR CARPENTRY CENTERS

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CHILDREN'S WORKSHOP: IDEAS FOR CARPENTRY CENTERS

For the past year and a half we've consciously been on the lookout for carpentry activities actually happening in a classroom center as a part of the basic program for young children. We've looked in child care centers, preschools and nurseries, primary grade classrooms, and kindergartens of all philosophy and methodology. Except for undergraduate students enrolled for practica in teacher training programs, not one classroom we observed has offered this curricula area. We did locate, however, two teachers who regularly provided this center as an outdoor activity. Also, one preschool center, which had two beautifully designed woodwork tables, stored one atop the other in a supply closet. Additionally, five kindergarten classrooms had workbenches, which are difficult for children to use, pushed into storage corners.

Most introductory textbooks in Early Childhood recognize carpentry as a valuable activity for young children (Cohen and Rudolph, 1977) describe it as a basic curricula offering, along with blocks, water play, dramatic play centers, and so forth. In spite of this general acknowledgement, very little information is available for the teacher who seeks to learn about the values of woodwork for young children, about how to introduce and manage this center, and most importantly, what material to put in the center and what to do with it. This article addresses these topics in addition to describing for the reader the stages young children pass through as they become active participants in carpentry centers.

Building on the child's development

When a child enters a classroom, the carpentry center is often the area that makes the strongest impression. Most likely all the children have seen a parent or carpenter performing this magical skill and have developed a keen appreciation for and longing to participate in this area. The teacher, who can build upon this existing motivation, has an opportunity to provide for the children an area rich in physical skill development, real world application, and concept attainment.

Observe a young child as he/she hammers a nail for the first time. When the small muscles grasp the hammer in one hand, intense concentration begins. As the child secures and positions a nail in the other hand, pincer control is exercised. Eye-hand coordination maintains the relationship between the two objects as both are held steadily and securely. Concentration deepens when visual perception comes into play to enable the child to bring the correct end of the hammer squarely atop the nail head. In time, as physical control of the gross motor and fine motor muscles develop, the child discovers, through guided experiences, the technical aspects of carpentry that generalize into broad concepts of texture, size, and methods of joining and separating, to name only a few. Accompanying increased proficiency in technique and awareness are increases in self-esteem, confidence, and reliance. The benefits of completing, by oneself, a self-initiated construction project are seen clearly in the confidence displayed by a young child as he/she shares the experience.

Through involvement in woodwork activities, the teacher provides the child with an opportunity to integrate, discover, develop, and practice many skills and concepts, as shown in the chart below.

Values of Woodwork for Young Children

| Skills and Concepts | Developmental Area | | |
|---|---|---|---|
| | Physical | Social-Emotional | Cognitive |
| Gross Motor Ability | x | | |
| Fine Motor Ability | x | | |
| Social Interaction Skills | | x | x |
| Task Completion | x | x | |
| Language Development | | x | x |
| Eye-hand Coordination | x | | x |
| Visual Perception | x | | x |
| Emotional Maturity | | x | |
| Vocabulary Development | | x | x |
| Problem Solving | x | x | x |
| Cause-Effect Relationships | x | x | x |
| Perseverance | x | x | x |
| Mechanics of Construction | x | | x |
| Mechanics of Design | x | | x |
| Creativity | x | x | x |
| Safety Awareness | x | x | x |
| Self-Reliance | x | x | x |
| Self-Esteem | x | x | x |
| Spatial Relationships | x | | x |
| Texture Awareness | x | | x |
| Number Awareness | x | | x |
| Sensory Pleasure | x | x | x |
| Properties of Matter | x | | x |
| Physical Changes | x | | x |
| Planning | | | x |
| Anticipating | | | x |

Stages in Woodwork

Because there are ranges in the physical, social-emotional, and cognitive capabilities, the astute observer of child development can point out these differences by carefully watching young children in their routines. In woodwork, for example, the children will be at a

variety of levels; some will be quite adept in basic techniques while others will be fearful; some will never have held a real tool and may even have been cautioned away from using tools, yet all will be eager to participate. An awareness of the different stages through which children naturally progress will enable the teacher to plan activities closely aligned with the needs of individuals.

Regardless of chronological age, all individuals begin at Stage One and transit to other levels as interest, opportunity, and skill interact with one another. The speed at which any one person moves through one stage and into the next depends upon many factors, with age and experience being among the more important. That is, a five-year-old child will most likely move through the first three stages more rapidly than a three-year-old and will catch up to his experienced peers before too long. Consequently, the more opportunity a child has to work in the carpentry center, the more rapid will be her/his transition to higher levels of proficiency.

Stage One: Acquaintance with Tools and Wood

To feel secure, the young child will touch all of the tools and much of the wood. The holding and feeling of all the material passes on information to the child about weight, balance, strength, and, of course, texture. The child will move the wood from one place to another, shake the worktable, take out and replace the tools, and when the motions and behaviors the child has noted as appropriate for being at the center are learned, he/she will then move to the next level.

Stage Two: Simple Skills Attempts

The child will begin to enlarge upon his/her awareness of the media of carpentry by experimenting with some of its uses and the processes involved. Hammering, sanding, gluing, sawing, and even placing pieces of wood securely into the vise and removing them are among the basic skills explored during this stage. Thus, simple activities will be tried and accomplished, but little, if any, building of objects will occur.

Stage Three: Simple Construction

As the child develops confidence in his/her ability to use tools, methods of joining two media are discerned. Through practice with the basic skills just acquired, the necessity to utilize cognitive skills is rewarded by the increase in complexity of finished products. When the child selects a piece of wood, places it in the vise, separates it by sawing, and then joins it together in a new way by forming a cross and hammering several nails into the top piece to make it stay together, advanced cognitive skills in planning, sequencing, creating, and evaluating have been exercised. At the conclusion of this stage the mechanics of carpentry have been learned. Construction has begun, but form has not, as yet, been intended to represent reality.

Stage Four: Refinement

As skills in simple construction increase by repeating several projects and varying design only slightly, methods of adding to these projects are discovered. Another media, such as paint or string, may

be incorporated to make the project more complete. Sanding rough edges, painting over a side with a knothole, and gluing prior to nailing, are among some of the "extra touches" found at this stage. Through an abundance of repetition, skills are further refined and elements of true creativity are begun.

Stage Five: Functional Construction

With techniques established and methods of fixing and decorating practiced, the child's work is viewed through a new set of eyes. As he/she steps back to assess a project in process, a name is usually applied to the form as it emerges from the arrangement of pieces of wood. The child then manipulates the wood or adds extra media to give the form the dominant visual characteristics of the name. For example, two pieces of wood, crossed, become an airplane when one piece is moved forward and a smaller piece is added to the rear for a tail. Sanding the edges, applying paint, and adding spools for engines may be needed for further reality.

Stage Six: Decorative Combinations

With attention given to planning, the child, after having first conceived of an idea, collects the necessary materials and executes a mental blueprint. With an emphasis on reality, concepts of measuring and proportion are used. The difference between the behaviors at this level and those found at Stage Five are the presence of forethought accompanied by an increase in detail. Structures at this stage are apt to be those needed for play elsewhere. In other words, the child now

uses carpentry as a tool in itself; he/she constructs with the intention of utilizing the product in the future. A chair for a doll in the housekeeping area or an intricate hamster maze to be used at the science center are examples of purposeful building.

Stage Seven: Emergence of Craft

With each successful experience, the child is reinforced to try additional new ideas and to refine old techniques. He/she is able to utilize carpentry as both a functional and symbolic skill, and is persistent in efforts to practice and to create. Interest is maintained with little, if any, motivation from outside.

A Teaching Tool

To utilize a carpentry center in the classroom as a valuable teaching tool for young children, careful attention must be given to designing the center, introducing it to the children, and, finally selecting activities appropriate for the various stages of proficiency among the children. Once this has beer accomplished, then the center can be available each day during free play.

A fundamental problem in the design and set-up of the carpentry center is often the lack of expertise and skill of the professional staff. We understand that this is only a sex-role stereotype and feel that a short in-service program on carpentry is the answer. Because females typically lack experience, not capability, and because more women teach young children than do men, carpentry skills often need to be learned by the teacher as well as by the young child.

An inservice program can give enough familiarity with basic tools and techniques to overcome any uncertainty or hesitancy on the teacher's part. There are numerous sources willing to assist in all phases of the carpentry center process. Hardware stores, lumber yards, home repair centers, and local carpenters all have the capacity and desire to assist in the development of the carpentry center. These professional volunteers can bring to the program years of experience and true craftsmanship. They can assist in the planning of the project, the in-service program, the selection of appropriate equipment, construction of the carpentry table and tool boxes, and most importantly bring the magic, skill, and fun of carpentry activities to the children.

Begin by selecting a location for the center that will allow two to four children to work and move comfortably around a table. Be sure that the distance between the table and area boundaries allow ample room for arms and legs to move safely without the child feeling inhibited. Find an area of the room where noise is not a problem. Perhaps an adjacent small room is available. Oftentimes an area adjacent to the playground exit is best so that the worktable can be moved outside in good weather.

The next step is to secure a worktable, using as guidelines simplicity, sturdiness, and stability. Commercial worktables are available, but use caution in making your choice. One type, a workbench, has worktop dimensions of only 9" x 33". It resembles a sawhorse which might account for its visual appeal, but it doesn't provide enough

space for the child's work nor enough room for more than one child at a time. Thus, a workbench of this type prohibits more than elicits activity in carpentry. A worktable, on the other hand, typically has a surface working area of 24" by 42", with straight, square legs, a shelf about 8" from the floor, a drawer, and an attached vise.

To avoid purchasing a table, consider several alternatives. An old library table can be made child-size by shortening the legs so that the working area is between 22" and 26" from the floor. Sawhorses with a heavy board surface secured tightly to assure no tipping can also be made. Figure One, below, illustrates a simple design that can be quickly and inexpensively made.

Insert Figure One About Here

Whether you make or purchase the worktable, it should not be carefully painted. Solid, unstained wood is best as it does not prohibit rough use. Make the center attractive and inviting, but do not limit its use through an emphasis on fragility.

When selecting the wood to store on the bench under the table or in a separate chest or shelf, make sure it is raw, unpainted, and of a density that will challenge the hammer. Plywood is too hard, fir splinters too easily, and pine, poplar, and balsa are just about right. Pieces of wood can be collected at no charge from scrap piles

at lumber yards, building sites, and sometimes even furniture stores. About 30 pieces of wood, 3' in length, 3/4" thick, and from 2" to 12" wide, will be needed to start. Organize and stack the wood by size and arrange it so that the pieces can be seen.

The tools for the center should not be children's play toys, as they are not sturdy, not balanced, and not real. Good quality adult tools are best and only the basic ones should be routinely available. When collecting the tools, consider the following chart as a guideline in starting and stacking the carpentry center.

Basic Tools for Carpentry Centers

| Tool | Number | Types |
|---|---|---|
| Hammer | 4 to 6 | 2 flathead; 1 10-oz; 1 13-oz.; 1 adult weight; 2 with claws |
| Saw | 1 or 2 | coping saw; #8 crosscut |
| Pliers | 1 | |
| Metal Clamps | 4 to 6 | 3", 4", and 5" openings, |
| Hand Drill | 1 | store the bits in the handle |
| Ruler | 1 or 2 | 12" and yardstick |
| Pencil | 4 to 6 | flat carpenter style; wide primary style |
| Scissors | 1 | large size |
| Sandpaper | 1 package | variety of surface textures |
| Nails | several | 1" to 1½" broadhead; sorted and stored in clear, plastic containers |

Store the tools in a tool cabinet, similar to that shown in Figure 2, below. Show where each tool belongs by outlining its shape on the pegboard. Place the tool cabinet at eye level on a wall adjacent to the worktable. Be sure to routinely inspect the tools for broken

parts and loose handles. Have the saws sharpened once a year; oil and wrap them in newspaper for the summer.

Insert Figure 2 About Here

Later in the year additional tools, which are basic but more difficult to use, can be added to the tool cabinet. Among them are the following:

Supplementary Tools

| Tool | Number | Type or Function |
|---|---|---|
| Wire Cutter | 1 | regular |
| Screwdrivers | 3 | Phillips; 8"; 12" |
| Screws | 7 | assorted in clear, plastic containers<br>plastic containers |
| Rasp | 1 | for rounding and shaping |
| Plane | 1 | for smoothing and shaving |
| Brace and Bit | 1 | |
| Magnet | 1 or 2 | large size to pick up metal pieces rapidly |

Accessories will be needed for many of the planned activities. These may be housed in a closet or the art center, and made available as needed. Some of the media will already be in the classroom; the remainder can be collected and sorted into plastic shoe boxes, such as the accessories listed below.

Carpentry Accessories

| Category | Type or Function |
|---|---|
| Metal gadgets | hooks; eyes; hinges; tacks; locks; fasteners; sorted and stored in clear, plastic containers |
| Rope | string; twine; yarn; ribbon; cord; sewing supplies |
| Rubber | tire pieces; elastic; tubing |
| Wood | tongue depressors; dowels; boxes, spools; toothpicks |
| Leather | large and small pieces; |
| Knife | varying patterns, colors, and |
| Art Supplies | textures |
| Soap | large and small pieces |
| Floor Pieces | pocket style for writing |
| | glue; brushes; paints |
| | rectangular bars for modeling |
| | linoleum and carpet squares |

Supervision, Safety, Security

When the materials are collected, safety checked, and approved by the teacher, the center is then ready for the classroom. Set it up after rapport has been established and after the classroom procedures are routine behaviors. Probably the teacher has already discussed the center, its contents, and safety procedures; if not, be sure to do this during a large group activity time prior to free play. Include in the discussion the following procedures for the children to follow, realizing that several discussions will be required and that stating rules does not mean that they are understood.

> All equipment and tools have a home; when something is taken out of its home, it needs to be returned to its home.

Each tool has a particular use and is limited to that use only.

No one should hold equipment or a tool for anyone else. Use a tool instead of a person.

If a tool doesn't work or if you need help, ask the teacher or another adult for assistance.

Take groups of 2 to 4 children to the center and show the location of equipment and tools. Talk about the names of tools, take each out, feel them, pass them to someone else, and put them away. Call out a particular tool by name, take it out and put it back. Feel the edge of the saws. Talk about how the hammers are alike and different. Put wood in the vise and take it out. Shake the table. When the teacher is confident that an understanding of the center's equipment and procedures are understood, then free use of the area can be initiated. Depending upon the particular activity, spot check for safety, assign an aid to the worktable, or be there yourself.

Planning Activities by Stages

The newness of the center will maintain and reinforce the children's interest as they progress through Stages One and Two. As was discussed earlier, the children will not all be in the same stage, so the different developmental needs will require planning for individuals. Therefore, by making available activities designed to meet the developmental characteristics found in the specific stages, the needs and

interest of each child can more appropriately be met and challenged. Arranged by stages, the activities that follow will enable the children to exercise skills in a developmental sequence.

Stage One: Acquaintance with Tools and Wood

1. Invite a carpenter or skilled parent to visit the classroom. Discuss the tools and their uses. This activity may be appropriate for several classroom visits.
2. Play a variety of simple games. Call out the name of a tool and have a child find it, get it from the tool chest, and then return it.
3. Show a picture of a tool or part of a tool. Have the child name it, get it, and return it.
4. On tagboard, outline several tools, or outline them separately on individual cards. Have the child name the tool, locate it, place it on top of the silhouette, and return it.
5. Call out a tool use, and have the child locate the tool, name it, and return the tool.
6. Pantomime tool use. Have the child guess the tool, locate it, return it, and then pantomime a tool use for the group.

Stage Two: Simple Skill Attempts

1. Bring a log or stump into the center. Encourage the children to hammer nails, and twist, by hand, cup hooks into the wood.
2. Using glue (colored to make it inviting) stored in plastic dispensers, squeeze a design onto a piece of wood. Sprinkle grits,

glitter, sand, or salt on top and shake off the excess.

3. Place a 6" board into the vise and saw it into pieces. Smooth the edges and move the pieces to the manipulative center for stacking and arranging.
4. Cut, with scissors, large pieces of cardboard. Hammer them into pieces of wood.
5. On a board about 6" square, make about 8 large dots with a magic marker. Hammer a nail into each dot.
6. Divide a board of about 3' by 12" into equal sections with each child having one section labeled with his/her name. Have each child hammer nails into his space. The class collage may be finished or decorated as each individual desires.

Stage Three: Simple Construction

1. Place nails, strips of molding, and foot long pieces of lumber on the worktable. Discuss with the children arrangements of media and assist them in securing placements.
2. Place 6" squares of wood, nails, string, and rubber bands on the worktable. Encourage the children to hammer several nails into the wood and wrap string or stretch rubber bands among the posts.
3. Place pieces of styrofoam, toothpicks, glue, cardboard pieces, and popsickle sticks on the worktable. Assist the children in stacking, arranging, and securing a sculpture.

4. Place a large piece of cork on the worktable and several fasteners that require turning and twisting, such as screws and hooks. Encourage the children to use screwdrivers and their thumb and forefinger to secure the fasteners.
5. Place several pieces of soft wood, the drill, and several bits on the worktable. Encourage the children to drill holes of all sizes, to change bits, and to compare the sizes of holes made by the different bits.

Stage Four: Refinement

At this level of development, the children will require supplementary media to extend their activity and to achieve a closer approximation of dominant visual characteristics. By simply placing on or near the woodwork area appropriate supplies, the children's skills and interest will be rekindled.

1. Make available each of the primary colors when the children are using pieces of board. Vary this by supplying pastels and textured paints.
2. Instead of using the easel brushes, place 1" and 2" paint brushes, inexpensively available at hardware stores, on the table.
3. When the children are hammering into individual squares or rectangles, make available screw-hooks that can be twisted into the top for later mounting on the wall.
4. Place glue and material scraps, including ribbons and ric rac, on the worktable. Encourage the children to cut and glue designs of their choice onto pieces of wood.

Stage Five: Simple Construction

1. Place pieces of wood, approximately 3" by 3", sandpaper, glue, scissors, and 1" wide elastic on the workbench. Encourage the children to make sandpaper block instruments by gluing the sandpaper onto the wood on one side and nailing a small piece of elastic, through which a finger may fit, on the other side. These should be used in a rhythm exercise later in the day.
2. From a collection of stick or dowels, a variety of objects from nature, and string, make a mobile. The crosspieces of wood at the top may be hammered together or wrapped in string.
3. To a piece of wood or dowel, encourage the child to attach a 4' piece of string to one end. To the other end of string, attach a magnet. This fishing hole should be used later in the day for dry fishing at the water table.
4. To a small piece of wood, approximately 2" by 4", tack tongue depressors to the front, side by side. Use this later at the water table for boat races.
5. Glue a variety of textures, hues, and shapes of wood to a piece of hard cardboard backing. These make quite attractive wall hangings.

Stage Six: Decorative Combinations

1. Discuss with a small group of children a classroom need, such as a cup rack for the housekeeping area. Plan and execute the entire project.

2. For a holiday, plan to make a decorative plaque. Select the wood and picture. Sand the edges of the wood and stain it if desired. Using a mixture of 1 part Elmer's glue to 1 part water, paint the picture onto the plaque. Using a rolling pin roll out excess glue. When dry, paint the entire project again using the same mixture. Put a screw-eye on top for mounting.
3. With a collection of cigar boxes, paint and decorate each. Adhere a handle by mounting a leather strap or knob to the top. This can be used for pencils, jewelry, or whatever.
4. Secure 3 or 4 wooden crates. Discuss with the children how they can be useful shelves in an area of the classroom. Plan ways to fasten one to the other and select the paints to be used.

Stage Seven: Emergence of a Craft

No specific activities are required to encourage the emergence of this stage. Simply be attuned to the statements of the children and provide support, both by discussing plans and possibilities and by supplying appropriate media for the children to use in the execution of their project.

Bibliography

Beaty, J.J. Skills for preschool teachers. Columbus, Ohio: Charles E. Merrill, 1979.

Cohen, D.H. and Rudolph, M. Kindergarten and early schooling. New Jersey: Prentice-Hall, 1977.

Headley, N.E. (Revisor) Foster and Headley's education in the kindergarten: Fourth edition. New York: American Book Co., 1966.

Hodgen, L., Koetter, J., Laforse, B., McCord, S., and Schramm, D. School before six: A diagnostic approach, volume II. St. Louis: CEMREL, 1974.

Leeper, S.H., Skipper, D.S., and Witherspoon, R.L. Good schools for young children: Fourth edition. New York: Macmillan, 1979.

Lowenfeld, V. and Brittain, W.L. Creative and mental growth: Sixth edition. New York: Macmillan, 1975.

Read, K. and Patterson, J. The nursery and kindergarten: Seventh edition. New York: Holt, Rinehart, and Winston, 1980.

Read, K.H. The nursery school: Human relations and learning. Sixth edition. Philadelphia: W.B. Saunders, 1976.

Ramer, T.L. Complete kindergarten handbook. West Nyack, N.J.: Parker Publishing Co., 1979.

Rudolph, M. and Cohen, D.H. Kindergarten: A year for learning. New York: Appleton-Century-Crofts, 1964.

Todd, V.E. and Hefferman, H. The years before school: Guiding preschool children, Third edition. New York: Macmillan, 1977.

Weber, E. The kindergarten: Its encounter with educational thought in America. New York: Teachers College Press, 1969.

Reference

Cohen, D H. and Rudolph, M. Kindergarten and early schooling.
New Jersey: Prentice-Hall, 1977.

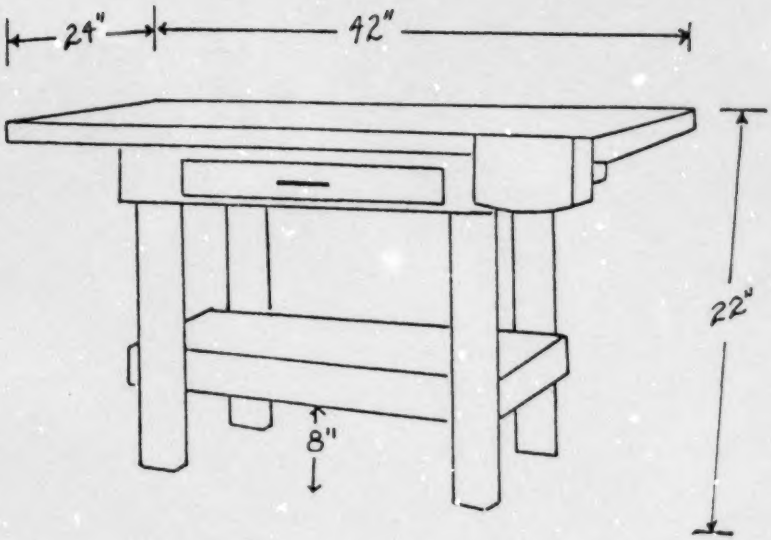


Figure 1

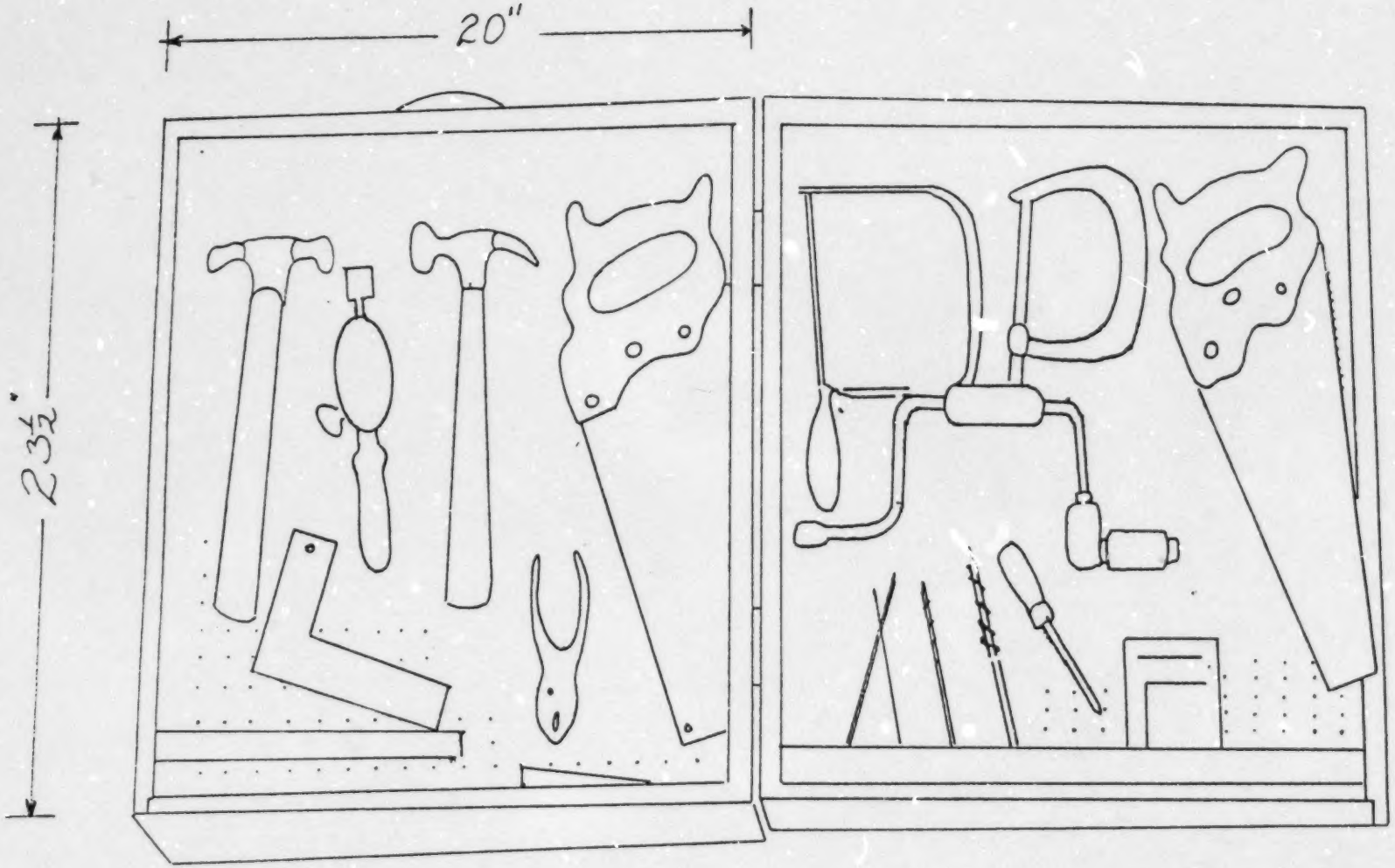




Figure 2